

**STATE OF RHODE ISLAND
AND PROVIDENCE PLANTATIONS
DEPARTMENT OF HEALTH
Office of Drinking Water Quality**

Safe and Healthy Lives in Safe and Healthy Communities

The Honorable Donald L. Carcieri, Governor
Patricia A. Nolan, M.D., MPH, Director

Annual Compliance Report 2002

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Copies of this information are also available in braille, large print, audio cassette, and electronic file on computer disk. Contact the Department of Health, Drinking Water Quality, 3 Capitol Hill, Providence, RI 02908, phone number 222-7789, or Relay RI (TTY) at 1-800-745-5555.

OVERVIEW

The mission of the Department of Health is ***“to prevent disease and to protect and promote the health and safety of the people of Rhode Island.”*** In carrying out this mission, the Office of Drinking Water Quality is responsible for ensuring the quality of the state’s public drinking water supplies. The Office of Drinking Water Quality works closely with local water suppliers, other state and federal agencies, and various divisions within the Department of Health to ensure the safety of the state’s drinking water. The Department of Health’s Division of Laboratories, Office of Environmental Health Risk Assessment, Office of Occupational and Radiological Health, Division of Disease Prevention and Control, and the Office of Food Protection also play a role in ensuring the quality of the state’s drinking water.

The Department of Health considers drinking water protection to be an essential and fundamental public health program.

This report was written to educate the public about the ways the Department of Health maintains and improves the quality of the state’s drinking water and to highlight both the successes and challenges of the Department and local water suppliers in maintaining high-quality drinking water.

Public Drinking Water - 2002

The definition of a public water system is a system for the provision to the public of piped water for human consumption, provided such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Public water systems range in size from the Providence Water Supply Board, which serves about 500,000 residents, to small rural non-community transient systems, such as restaurants and convenience stores that utilize wells as their drinking water source. Fifty-six percent of the regulated water systems are food establishments with their own supply wells.

RHODE ISLAND DRINKING WATER FACTS

PERSONS SERVED BY PUBLIC WATER IN RHODE ISLAND	*1,051,504
Persons served by surface water systems	*838,965
Persons served by groundwater systems	*475,406
Number of public water systems in Rhode Island	481
Community Systems	83
Non-Transient Systems	72
Transient Systems	326
Number of systems using surface water	25
Number of systems using groundwater	**463

**Includes all populations, transient, residential, and workplace.*

***Some water systems use both ground and surface water.*

Table 1

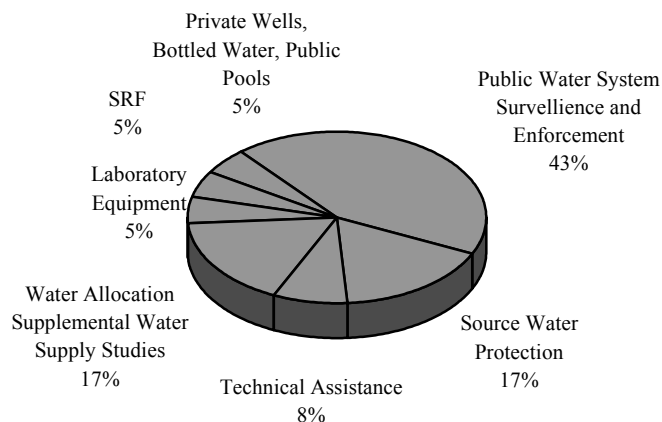
Overall, the public water systems in Rhode Island have maintained a very good record of supplying high-quality, safe drinking water.

Program Budget

During 2002, the Office of Drinking Water Quality was staffed by 20 persons. The total budget for this office during this period was:

Federal Funding	\$ 2,502,615
State Funding	<u>476,922</u>
Total Budget	\$ 2,979,537

Allocation of funds is shown below



WATER QUALITY PROGRAMS

Ensuring the quality of the state's drinking water has placed many new demands on public drinking water systems. During 2001, the Office of Drinking Water Quality offered several programs to assist water systems with limited resources. We also continued to evaluate the sources of contamination and reasons for vulnerability of our drinking water supplies.

Counterterrorism Planning

With funding from the Environmental Protection Agency (EPA) and the Center for Disease Control (CDC), HEALTH hired a contractor and a senior sanitary engineer in the Fall of 2002 to work on counterterrorism planning for the office and also to oversee and assist the required RI water utilities in meeting their requirements of the *Public Health Security and Bioterrorism Preparedness and Response Act of 2002*.

Within the Office of Drinking Water Quality (DWQ), research is being done on incorporating security/vulnerability concepts into the office's procedures, design approvals, and inspections of Public Water Systems. Steps have also been taken to update the Office of DWQ's Emergency Response Plan. The office's response to terrorism and other intentional acts has been addressed in addition to other aspects of the Office's emergency preparedness and response/prevention capabilities. The counterterrorism planning activities within our office are also being integrated with the broader counterterrorism/bioterrorism planning at HEALTH.

A total of 26 Community Water Systems in Rhode Island are required to complete and submit vulnerability assessments to EPA Headquarters per the *Public Health Security and Bioterrorism Preparedness and Response Act of 2002*. DWQ is tracking, inspecting, and evaluating these required

vulnerability assessments to be sure that they are completed and submitted on time to EPA. In 2003, Drinking Water Vulnerability Assessment Security Trainings will be held for these water systems.

Public Swimming Pools

Public Swimming Pools are defined as “All traditional swimming pools, wading pools, and therapeutic pools owned or maintained by any person, partnership, association, corporation, city or town or state, except swimming pools maintained by an individual for the sole use of his or her household and guest without charge for administration and not for the purpose of profit or in connection with any business operated for the purpose of profit and except also swimming pools owned and maintained by the United States.”

HEALTH ensures that public swimming pools are constructed and operated in a safe and sanitary manner. Inspections of the filtering system, water quality and other sanitary and safety concerns are performed routinely. In 2002 there were 172 licensed indoor pools and 215 licensed outdoor (seasonal) pools for a total of 387 licensed swimming pools. There were 1262 analysis for bacteria, residual chlorine and pH in which 9.6% bacterial samples, 14.8 % residual chlorine samples and 9.9 % pH samples were in violation of the regulations.

Bottled Water

Bottled water is a food product and as such is regulated by the Food and Drug Administration (FDA), which defines bottled water as “water that is intended for human consumption and that is sealed in bottles or other containers with no added ingredients except that it may optionally contain safe and suitable antimicrobial agents.” Bottled water may come from several sources: artesian water, artesian well water, drinking water, mineral water, purified water, sparkling water, spring water or well water.

Bottled water must adhere to the FDA’s Quality Standards, Standards of Identity (Labeling Regulations) and Good Manufacturing Practices. Quality Standards include the annual chemical analysis to determine what, if any, contaminants are in the water. Standards of Identity (Labeling Regulations) established standard definitions of terms found on bottled water labels. Good Manufacturing Practices govern such areas as plant and ground maintenance, sanitary maintenance of the building, fixtures and plumbing.

In 2002 there were 100 out of state licensed bottled water companies and 6 in state licensed bottled water companies. Prerequisites for obtaining a bottling permit are: submittal and approval of analytical data for the water source, label approval, satisfactory inspection reports and approval of a licensing application.

PRIVATE WELLS

Legislation Passed Relating to Private Well Water Quality

On June 25, 2002, the Rhode Island Assembly passed legislation relating to the quality of drinking water from private wells. The legislation calls on HEALTH to set drinking water standards for private wells and promulgate regulations requiring testing of newly installed private drinking water wells beginning July 2003 and existing private wells at properties being sold after July 2006.

The regulations will help to close loopholes in the issuance of certificates of occupancy by town building departments, while allowing for extensions or exemptions where appropriate. Delays in the implementation of these regulations are expected due to a lack of funding for a reference database showing areas where it is known the groundwater may have contaminants of concern to health.

Operator Certification

The State's efforts in implementing revised regulations continued and were summarized in its first annual report to EPA region 1. The report provided updates on the classification of systems, facilities and operators, operator qualifications, enforcement, certification renewal, resources needed to implement the program, stakeholder involvement, program review, and overall implementation. Further detailed was the resolution of one (1) enforcement action and a description of the State's goal to achieve 100% compliance by the end of the calendar year. The State did achieve nearly 100% compliance and now turns its focus to upcoming renewal cycles and certifying operators through examination.

Drinking Water State Revolving Fund

The Year 2002 saw DWSRF program momentum build with potential loans to the Pawtucket Water Supply Board (\$115,000,000) and Woonsocket Water (\$10,165,250) nearly finalized. HEALTH received confirmations from several public water systems of their intent to finance projects during the spring of 2002. Providence Water (\$4,500,000), Newport Water (\$3,000,000), and Camp JORI (\$850,000) have or are in the process of obtaining Certificates of Approval for various projects that are expected to begin construction between February and April 2003.

As of December 2002, Rhode Island had received a total of \$42,690,000 representing its entire 1997, 1998, 1999, 2000 and 2001 federal capitalization grant awards. The State is planning to apply for its 2002 grant in the amount of \$8,520,500 in May of 2003. Portions of the grants are being used to fund non-construction project activities essential to ensure the quality of the State's drinking water supplies.

Capacity Development

Capacity Development refers to the ability of a Public Water System to meet the present and future needs of its customers for safe and clean drinking water. This ability is measured in three areas, Technical, Managerial and Financial. Technical improvements can be funded by loans through the Drinking Water State Revolving Fund (DWSRF). Managerial and Financial improvements are supported through technical assistance and training.

Capacity Development efforts have been focused on assisting small water systems make improvements to provide quality drinking water to their consumers and to remain in compliance. In order to accomplish this, the Office of Drinking Water Quality has established the following contracts with vendors to provide training to water systems and to provide educational programs for municipal officials and the general public concerning drinking water issues.

The contracts with Atlantic States Rural Water & Wastewater Association includes assistance with: preparing the Consumer Confidence Report, completing the loan application for the Drinking Water State Revolving Fund, and utilizing a Circuit Rider to troubleshoot targeted water systems.

The contract with New England Water Works Association includes: providing classes to prepare water system operators for the operator certification exam and providing operator training classes for water system operation and maintenance.

The contract with the University of Rhode Island Cooperative Extension includes: a series of workshops to train and educate municipal officials regarding source water protection; residential pollution prevention workshops, and utilizing fact sheets and other educational materials on best management practices for residential and municipal source water protection.

The series of municipal workshops will utilize the source water assessment results to provide hands-on training in designing effective and appropriate municipal plans for source water protection.

Source Water Assessment Plan

This program is intended to identify the potential threats to the quality of sources of public drinking water, and to inform the public of the nature and severity of those threats. This one time assessment will complement existing protection programs including the Wellhead Protection Program at DEM, and the Water Quality Protection Planning requirements of the Water Supply System Management Plans. Both surface and groundwater, community and non-community sources will be assessed. All assessments will be completed by the summer of 2003.

The program benefits public water suppliers by identifying the most important threats to their water supplies, and where threats are absent, by supporting monitoring relief in the form of testing waivers. In addition, a requirement of the Safe Drinking Water Act Amendments of 1996 is that the results of the assessments must be made available to the public. It is intended that these efforts will result in political support for increased protection of drinking water sources. Public availability must be accomplished in such a way that the physical security of the supply is not compromised.

A Source Water Assessment Plan, approved by EPA, is an aggressive plan to involve the local communities and suppliers in producing source water assessments that are as current and useful as possible. The University of Rhode Island Cooperative Extension has contracted with us to work with large water suppliers to assess their water sources, and to assist in publishing the final results of the assessment process. The Cooperative Extension will also be conducting training workshops (under a contract in the Capacity Development program) to assist municipalities in incorporating the assessment results into their Comprehensive Community Plans.

Working through existing environmental and planning groups around the state, we have convened local committees to review and assess existing land-use inventory data. The committees have recruited volunteers, who were trained by Rhode Island Home*A*Syst to do inventory of all land uses within the recharge areas of drinking water sources. This data is being combined with data from the RI Geographical Information System (RIGIS) to produce maps and vulnerability assessments which will indicate the relative threats to water quality posed by these land uses. Management opportunities will be suggested to address the specific threats identified for each source.

The results of the assessments will be distributed to large suppliers and municipal officials on computer disk. The disks will include GIS shapefiles of land cover, source locations, and potential sources of contamination. With some GIS capability, the supplier/municipality will be able to update these files and keep the assessments current.

We are printing assessment summaries for each system that will be available to the public, through the water systems as well as through public libraries, municipalities and HEALTH. Contact information is included in each assessment summary for access to further information.

Laboratory Services

The Rhode Island Department of Health continues to take an active role in assisting water systems with required water quality monitoring. ***The Department of Health currently collects and analyzes water quality samples for almost all of the state's 481 public water systems.*** The Department of Health Lab analyzed 6,495 samples, while the Office of Drinking Water Quality evaluated 21,530 samples. This testing not only ensures that each system complies with required monitoring, but more importantly, ensures the quality of the state's public drinking water.

Inspections

During 2002, the Department of Health, Office of Drinking Water Quality staff conducted Sanitary Survey inspections at 61 water systems serving a total of 162,837 people. These systems included 11 community water systems serving 150,140 people, 35 transient-non-community systems serving 7,022 people, and 15 non-transient, non-community systems serving 5,676 people.

Follow-up sanitary survey inspections were required at most all of these facilities to ensure that deficiencies were satisfactorily addressed. Additional inspections were conducted in direct response to requests for technical assistance from water systems. Additionally, survey personnel assisted in design conformance inspections.

DWQ inspection personnel also obtained the latitude/longitude GPS information on approximately 170 water system sources as required within EPA FRDS mandates.

Our goal is to perform a survey/inspection for all community water system and surface water systems every three years and to conduct survey/inspections every five years for non - community water systems with additional periodic inspections for systems that have experienced water quality problems.

REGULATORY UPDATE

The Office of Drinking Water Quality regulates all public water systems in the state. This includes not only the major municipal water systems but also many other facilities such as schools, factories, restaurants, and day care centers, that have their own water supplies. During 2002, 481 public water systems were regulated by the Department of Health.

Federal Legislation/Regulations

The Safe Drinking Water Act Amendments of 1996 were signed on August 6, 1996. The passage of these Amendments is bringing substantial changes to the drinking water program for water suppliers and the State, as well as greater protection and information to the public. New rule-makings stemming from the amendments are now beginning to converge on state programs and water suppliers. The coming changes are so comprehensive and demanding that they are being described by some as "The Perfect Storm."

Three new rule-makings were finalized by the EPA during 2001. These were the rules for Radionuclides, Filter Backwash Recycling and Long Term 1 Surface Water Treatment. In 2002, the bulk of the requirements under the Interim Enhanced Surface Water Treatment and Phase 1 Disinfection By-Products Rules became enforceable. Quick Reference Guides for each of these rules that are final have been incorporated into this report. The state is working with AWWA, NEWWA, EPA, and Atlantic States Rural Water to make training available on these various regulatory requirements. Water suppliers should become familiar with these various rules now. Cost effective compliance will only be achieved by considering their impact on each water system as a whole and choosing treatment or other infrastructure changes based on the system's overall compliance needs rather than rule by rule, sequentially.

Rhode Island Legislation/Regulations

Another responsibility of the Office of Drinking Water Quality is to implement several key pieces of legislation which have been passed by the Rhode Island General Assembly in recent years to enhance the protection of water supplies. These include the Comprehensive Clean Water Infrastructure Act, Water Projects Revolving Loan Fund Act, and the Board of Certification of Operators of Public Water Supply Facilities Act.

Beyond those programs falling under the jurisdiction of the Health Department, the Office of Drinking Water Quality is involved in many coordinated efforts and regularly participates in workgroups with local, state, and federal agencies and other organizations. Personnel from the Office hold positions on the Water Resources Board, Wastewater Operator Certification Board, and the Drinking Water Operator Certification Board. Office personnel review and comment on Water Supply Management Plans and Comprehensive Land Use Management Plans.

COMPLIANCE

The compliance data in this section is for calendar year 2002. The 2002 Annual Compliance Report summary table, as required by the Safe Drinking Water Act amendments of 1996, can be found in Appendix A at the end of this document.

During calendar year 2002, 42 violations of the Safe Drinking Water Act were reported by 39 of the State's 481 public water systems. Of these 42 violations, eight were monitoring violations, 29 were quality violations, and five were treatment technique violations. A summary of the violations is presented in Table 2.

Monitoring Violations

Monitoring violations occur when a water system fails to perform the required monitoring for a particular contaminant within a specified time period. During 2002, eight of the state's 481 water systems failed to perform the required monitoring within the specified time period. In all, eight monitoring violations were reported.

Quality Violations

Quality violations occur when the monitoring results for a particular contaminant exceed the drinking water standard within a specific time period. Public water systems must monitor for 90 contaminants including inorganic compounds, volatile organic compounds, synthetic organic compounds, radionuclides, and pathogens. During 2002, 27 of the 481 public systems exceeded a drinking water standard for a total of 29 violations. Of those 29 violations, 22 were bacteriological violations, one exceeded the standard for nitrate, five exceeded the standard for sodium, and one violation resulted from an exceedance of the standard for Total Trihalomethanes (TTHMs).

Sodium Violations

Sodium violations occur when community systems exceed the action level of 100 mg/L. Although not treated as a "standard" violation, exceedances of the 100 mg/L action level result in the initiation of public notification by the water purveyor. During 2002, a total of five exceedances of the sodium action level were identified.

Lead and Copper

To reduce the levels of lead and copper in our community and non-community non-transient public systems, the Lead and Copper Rule (LCR) and Lead and Copper Rule Minor Revisions (LCRMR) set specific requirements for monitoring, public education, corrosion control strategies and treatment including lead service line replacement.

Approximately 82 percent of the water systems regulated under the LCR have optimized their lead and copper levels. The remaining 18 percent are at various steps within the prescribed "treatment step" process or are conducting monitoring to optimize their treatment. The State had a very low level of lead and copper rule violations. During 2002, there was one treatment technique violation and three monitoring violations. Technical assistance efforts are being focused on this 18 percent in effort to achieve 100 percent optimization of lead and copper levels among the State's public water systems. During 2002, there were three instances of the Lead and Copper Action Levels being exceeded.

Table 2: Violation Summary

VIOLATIONS FOR CALENDAR YEAR 2002	# of Violation
Community (83 systems)	

VIOLATIONS FOR CALENDAR YEAR 2002	# of Violation
Quality: Heritage Park Home Cooperative (TCR) Pascoag Utility Water District (TCR) Split Rock Corporation (TCR) Hemlock Estates (TCR) Abbey Lane Comm. Assoc., Inc. (TCR) Harrisville Fire District (TCR) Town of N.K., Low Srv. Area (TCR) Portsmouth Water & Fire District (MCL)	1 2 1 1 1 1 1 1
Sodium: Brandy Acres Water Supply Heritage Park Home Cooperative Lawrence Sunset Cove Association South Kingston Nursing/ Rehabilitation Center Touisset Point Water Trust	1 1 1 1 1
Treatment Technique: Newport Water Department (DBPR & IESWTR) Cumberland Water Department (DBPR) E. Searles Ball Memorial Housing (LCR)	3 1 1
Monitoring: Newport Water Department (TCR) Woodland Homeowner's Assoc. (TCR) Warwick – Main (TCR)	1 1 1
<p style="text-align: center;">Non-Community Non-Transient (72 systems)</p> Quality: Wilbur & McMahon School (TCR) Ashaway Elementary School (TCR)	 1 1
Monitoring: Sunrise Academy/ Camp Sunrise (LCR) North Smithfield 282 Combat Comm. Squadron A.N.G. (LCR) Coventry Air National Guard (LCE)	 1 1 1
<p style="text-align: center;">Transient Non-Community (326 systems)</p> Quality: Ashaway Village Associates (TCR) Andrew's Realty, Inc. (TCR) Highview Inn (TCR) Stage Coach Tavern Restaurant (TCR) Seaview Motor Court (TCR) Nickerson Comm. Ctr. Day Camp (TCR) Little Rhody Vasa Park (TCR) In the Middle of Nowhere Diner (TCR) Old Town Inn (TCR) Laurel Grange #40 (TCR) Tokyo Japanese Steak House (TCR) Kilduff Brothers Builders, Inc. (TCR) Fantastic Umbrella Factory (MCL)	 1 1 1 1 1 1 1 1 1 1 1 1
Monitoring: Loyal Order of Moose (TCR) Sal's Pizza (TCR & MCL)	 1 1

Notes: TCR – Total Coliform Rule
LCR – Lead and Copper Rule
MCL – Maximum Contaminant Level
DBPR – Disinfection Byproducts Rule
IESWTR – Interim Enhanced Surface Water Treatment Rule

Treatment of Surface Water

The Surface Water Treatment Rules established filtration and disinfection treatment requirements for the control of pathogens for all public water supplies that utilize surface water sources or ground

water under the influence of surface water. The state of Rhode Island requires filtration for all systems that utilize surface water.

The Surface Water Treatment Rule (SWTR) covers systems that serve less than 10,000 people. Rhode Island has four water systems that must meet the SWTR. During the year 2002, all four systems met the turbidity and disinfection performance criteria required by the SWTR, including 1) filtered water turbidity levels less than or equal to 0.5 NTU in 95% of the measurements taken every month, 2) no single filtered water turbidity reading exceeding 5 NTU, 3) attaining 3-log and 4-log removal/ inactivation of *Giardia* and viruses respectively, 4) compliance with the minimum required disinfectant residual in the water entering the distribution system and 5) detectable disinfectant residuals or compliance with maximum levels of heterotrophic bacteria in at least 95 percent of the samples from the distribution system each month.

The Interim Enhanced Surface Water Treatment Rule (IESWTR) covers the five Rhode Island surface water systems that serve more than 10,000 people. In 2002 one system had two violations of this rule. The IESWTR builds on the requirements of the SWTR, adding provisions that include 1) 2-log removal of cryptosporidium, 2) strengthened turbidity requirements (turbidity levels must be less than 0.3 NTU in at least 95% of the monthly measurements and no single reading may exceed 1 NTU), and 3) the addition of continuous individual filter monitoring.

During 2002, one of the community public water systems, serving more than 10,000 people, failed to meet the requirements of the Interim Enhanced Surface Water Treatment Rule (IESWTR) resulting in a total of two treatment technique violations. Both violations resulted from turbidity exceedances.

Reduction of Disinfection Byproducts (DBPs)

The Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1 DPBR) is the first of a staged set of rules that will reduce the allowable levels of DBP's in drinking water. In 2002, all systems selling surface water to more than 10,000 people that add a disinfectant to the water began complying with this rule. In Rhode Island there are six systems currently covered by this rule. Requirements include: 1) limiting residual disinfectant levels in the distribution system for chlorine to 4.0 mg/l and chlorine dioxide to 0.8 mg/l, 2) reducing the allowable levels of disinfection byproducts for Total Trihalomethanes to 0.080 mg/l, five Haloacetic Acids to 0.060 mg/l and chlorite to 1.0 mg/l and 3) setting minimum requirements for the removal of disinfection byproduct precursors.

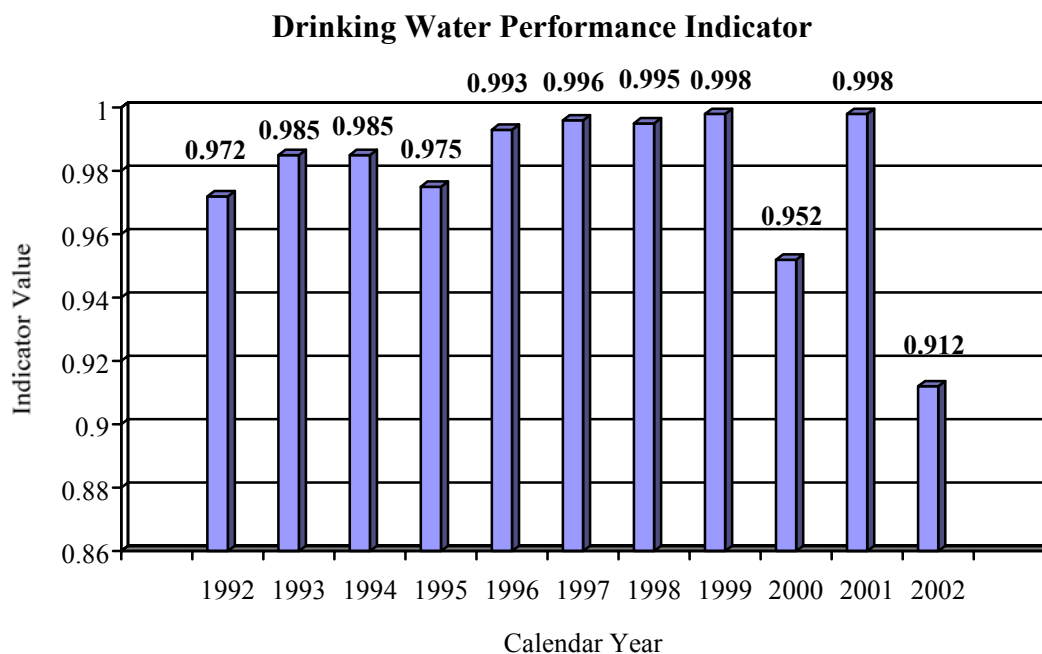
During 2002, three of the community public water systems, serving more than 10,000 people, failed to meet the requirements of the Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1 DPBR) resulting in a total of three treatment technique violations. Two of the violations resulted from the improper removal of Total Organic Carbon (TOC), and one resulted from an exceedance of the standard for Total Trihalomethanes (TTHMs).

OVERALL PERFORMANCE

Of all the requirements with which water systems are expected to comply, the most important is meeting minimum health standards. Each year, the Department of Health evaluates the progress of the State's individual water systems as well as Rhode Island's Drinking Water Program in meeting these minimum health standards. In making this evaluation, the Department of Health uses a "performance

indicator value,” based on compliance with Safe Drinking Water Act requirements for the entire year. The indicator value, shown below, is based on compliance with maximum contaminant levels (MCLs) and treatment technique requirements. To make the indicator more representative of the state’s drinking water quality, it is weighted by the number of days the system operated in compliance, the population served by the water system, and the total number of days that the system was actually in operation. An indicator value of 1.0 would mean that all public water systems were in compliance with every MCL and treatment technique requirement for the entire year.

On January 1, 2002, several new EPA treatment technique regulations were adopted by the larger systems (>10,000 served) in Rhode Island. The new regulations included running annual averages of certain target analytes. Exceedances of these running annual averages resulted in non-compliance for the entire year for three of our community systems. The resulting lowered performance indicator value for the 2002 calendar year reflected these additional burdens put on our larger systems.



$$\text{Indicator Value} = \frac{\sum (\text{PWS Population Served}) \times (\text{Days in Compliance With MCLs and Treatment Technique Requirements})}{\sum (\text{PWS Population Served}) \times (\text{Total Days in Operation})}$$

LOOKING AHEAD

The public demands drinking water of the highest quality feasible. As our analytical and technical capabilities become more sophisticated, the public's expectations increase. The continued provision of safe drinking water is becoming more expensive and technically more demanding. Public water

systems will need to ensure adequate financial, technical, and managerial resources so that they will be able to continue providing water which meets these expectations.

The Department of Health will be administering four technical assistance contracts to assist water suppliers in their efforts to achieve this goal: one for general training of water suppliers (awarded to NEWWA), another to write Consumer Confidence Reports for all systems serving less than 10,000 people (awarded to Atlantic States Rural Water), a third to assist small water systems understand and use the drinking Water State Revolving Loan Fund and provide on-site technical or financial/managerial assistance, also awarded to Atlantic States Rural Water, and the fourth to URI to provide training to municipal officials responsible for water systems and outreach to communities in their efforts to protect sources of drinking water.

Significant short-term challenges for Rhode Island's water suppliers and the Department of Health will be: continued implementation of the new Interim Enhanced Surface Water Treatment Rule and the Disinfectants and Disinfection Byproducts Rule. Compliance with these rules, due to their stringency and complexity is proving to be a challenge even to our larger water systems.

A longer-term challenge will be to navigate the sweeping regulatory changes that are presently being proposed and finalized by EPA. Both groundwater and surface water supplies will be affected. Water suppliers are urged to learn about proposed rules as soon as possible, attend training on these rules when available, and participate in EPA's rule-making process.

For the last several years, the Department of Health has been engaged in bioterrorism planning. Since the terrorist event on September 11, 2001, that emphasis has expanded to include a broader spectrum of counter-terrorism planning. In the coming year, with funding from the Environmental Protection Agency and the Center for Disease Control, the Department of Health will provide security training to water system operators; implement water system vulnerability assessments; and enhance many other aspects of the Office's emergency preparedness and response/prevention capabilities.

The public water systems in Rhode Island have maintained a very good record in providing high-quality, safe drinking water, but continued success will require renewed dedication. It will be an interesting and demanding year.

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DEPARTMENT OF HEALTH
Office of Drinking Water Quality

Appendix A
Compliance Table

State: Rhode Island

Reporting Interval: January 1, 2002 through
December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Organic Contaminants							
2981	1,1,1-Trichloroethane	0.2	0	0			0	0
2977	1,1-Dichloroethylene	0.007	0	0			0	0
2985	1,1,2-Trichloroethane	.005	0	0			0	0
2378	1,2,4-Trichlorobenzene	.07	0	0			0	0
2931	1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0	0			0	0
2980	1,2-Dichloroethane	0.005	0	0			0	0
2983	1,2-Dichloropropane	0.005	0	0			0	0
2063	2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁸	0	0			0	0
2110	2,4,5-TP	0.05	0	0			0	0
2105	2,4-D	0.07	0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2002 through
December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2051	Alachlor	0.002	0	0			0	0
2050	Atrazine	0.003	0	0			0	0
2990	Benzene	0.005	0	0			0	0
2306	Benzo[a]pyrene	0.0002	0	0			0	0
2046	Carbofuran	0.04	0	0			0	0
2982	Carbon tetrachloride	0.005	0	0			0	0
2959	Chlordane	0.002	0	0			0	0
2380	cis-1,2-Dichloroethylene	0.07	0	0			0	0
2031	Dalapon	0.2	0	0			0	0
2035	Di(2-ethylhexyl)adipate	0.4	0	0			0	0
2964	Dichloromethane	0.005	0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2002 through
December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2041	Dinoseb	0.007	0	0			0	0
2032	Diquat	0.02	0	0			0	0
2033	Endothall	0.1	0	0			0	0
2005	Endrin	0.002	0	0			0	0
2257	Epichlorohydrin				0	0		
2992	Ethylbenzene	0.7	0	0			0	0
2946	Ethylene dibromide	0.00005	0	0			0	0
2034	Glyphosate	0.7	0	0			0	0
2065	Heptachlor	0.0004	0	0			0	0
2067	Heptachlor epoxide	0.0002	0	0			0	0
2274	Hexachlorobenzene	0.001	0	0			0	0
2042	Hexachlorocyclopentad	0.05	0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2002 through
December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	iene							
2010	Lindane	0.0002	0	0			0	0
2015	Methoxychlor	0.04	0	0			0	0
2989	Monochlorobenzene	0.1	0	0			0	0
2968	o-Dichlorobenzene	0.6	0	0			0	0
2969	para-Dichlorobenzene	0.075	0	0			0	0
2383	Total polychlorinated biphenyls	0.0005	0	0			0	0
2326	Pentachlorophenol	0.001	0	0			0	0
2987	Tetrachloroethylene	0.005	0	0			0	0
2996	Styrene	0.1	0	0			0	0
2991	Toluene	1	0	0			0	0

State: Rhode Island

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December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2979	trans-1,2-Dichloroethylene	0.1	0	0			0	0
2955	Xylenes (total)	10	0	0			0	0
2020	Toxaphene	0.003	0	0			0	0
2036	Oxamyl (Vydate)	0.2	0	0			0	0
2040	Picloram	0.5	0	0			0	0
2037	Simazine	0.004	0	0			0	0
2976	Vinyl chloride	0.002	0	0			0	0
	Stage 1 Disinfectant Byproducts Rule							
1009	Chlorite	1.0	0	0			0	0
1011	Bromate	0.0 10	0	0			0	0

State: Rhode Island

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December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
1006	Chloramines	4.0	0	0			0	0
1008	Chlorine Dioxide	0.8	0	0			0	0
0999	Chlorine	4.0	0	0			0	0
2950	Total trihalomethanes	0.08	1	1			0	0
2456	Total Haloacetic Acids	0.06	0	0			0	0
	Unregulated Contaminants Monitoring Rule							
2009	4, 4' - DDE		0	0			0	0
2027	Acetochlor		0	0			0	0
2052	EPTC		0	0			0	0
2066	2, 6 - Dinitrotoluene		0	0			0	0

State: Rhode Island

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December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2270	2, 4 - Dinitrotoluene		0	0			0	0
2272	Terbacil		0	0			0	0
2626	Molinate		0	0			0	0
2108	DCPA		0	0			0	0
2251	MTBE		0	0			0	0
2254	Nitrobenzene		0	0			0	0
	Inorganic Contaminants							
1074	Antimony	0.006	0	0			0	0
1005	Arsenic	0.05	0	0			0	0

State: Rhode Island

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SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
1094	Asbestos	7 million fibers/l □ 10 □ m long	0	0			0	0
1010	Barium	2	0	0			0	0
1075	Beryllium	0.004	0	0			0	0
1015	Cadmium	0.005	0	0			0	0
1020	Chromium	0.1	0	0			0	0
1024	Cyanide (as free cyanide)	0.2	0	0			0	0
1025	Fluoride	4.0	0	0			0	0
1035	Mercury	0.002	0	0			0	0
1040	Nitrate	10 (as Nitrogen)	1	1			0	0

State: Rhode Island

Reporting Interval: January 1, 2002 through

December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
1041	Nitrite	1 (as Nitrogen)	0	0			0	0
1045	Selenium	0.05	0	0			0	0
1085	Thallium	0.002	0	0			0	0
1038	Total nitrate and nitrite	10 (as Nitrogen)	0	0			0	0
	Radionuclide MCLs							
4000	Gross alpha	15 pCi/l	0	0			0	0
4010	Radium-226 and radium-228	5 pCi/l	0	0			0	0
4101	Gross beta	4 mrem/yr	0	0			0	0
	Subtotal		2	2			0	0

State: Rhode Island

Reporting Interval: January 1, 2002 through
December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Total Coliform Rule							
21	Acute MCL violation	Presence	3	3				
22	Non-acute MCL violation	Presence	19	19				
23,25	Major routine and follow up monitoring						5	5
28	Sanitary survey ⁱⁱ						0	0
	Subtotal		24	24			5	5
	Surface Water Treatment Rule							
36	Monitoring, routine/repeat						0	0
41	Treatment techniques				4	2		

State: Rhode Island

Reporting Interval: January 1, 2002 through

December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Unfiltered Systems							
31	Monitoring, routine/repeat						0	0
42	Failure to filter				0	0		
	Subtotal				4	2	0	0
	Lead and Copper Rule							
51	Initial lead and copper tap M/R						0	0
52	Follow-up or routine lead and copper tap M/R						3	3
58,62	Treatment Installation				1	1		
65	Public education				0	0		

State:	Rhode Island
Reporting Interval:	January 1, 2002 through December 31, 2002

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Subtotal				1	1	3	3
71	CCR Complete Failure to Report				0	0	0	0
	Totals		29	27	5	3	8	8

1. Values are in milligrams per liter (mg/l), unless otherwise specified.

2. Number of major monitoring violations for sanitary survey under the Total Coliform Rule.

Definitions for Violations Table

The following definitions apply to the Summary of Violations table.

Filtered Systems: Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

Inorganic Contaminants: Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. EPA has established MCLs for 15 inorganic contaminants [40 CFR 141.62].

Lead and Copper Rule: This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following six categories:

Initial lead and copper tap M/R: SDWIS Violation Code 51 indicates that a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

Follow-up or routine lead and copper tap M/R: SDWIS Violation Code 52 indicates that a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

Treatment installation: SDWIS Violation Codes 58 AND 62 indicate a failure to install optimal corrosion control treatment system (58) or source water treatment system (62) which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in these two categories].

Public education: SDWIS Violation Code 65 shows that a system did not provide required public education about reducing or avoiding lead intake from water.

Maximum Contaminant Level (MCL): The highest amount of a contaminant that EPA allows in drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

Monitoring: EPA specifies which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow EPA's schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

Organic Contaminants: Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland or discharge from factories. EPA has set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

Radionuclides: Radioactive particles which can occur naturally in water or result from human activity. EPA has set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

Gross alpha: SDWIS Contaminant Code 4000 for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.

Combined radium-226 and radium-228: SDWIS Contaminant Code 4010 for combined radiation from these two isotopes above MCL of 5 pCi/L.

Gross beta: SDWIS Contaminant Code 4101 for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

Reporting Interval: The reporting interval for violations to be included in the first PWS Annual Compliance Report, which is to be submitted to EPA by January 1, 1998, is from July 1, 1996 through June 30, 1997. This interval will change for future annual reports. See guidance language for these intervals.

SDWIS Code: Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

Surface Water Treatment Rule: The Surface Water Treatment Rule establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the “Surface Water Treatment Rule” are to be reported for the following four categories:

Monitoring, routine/repeat (for filtered systems): SDWIS Violation Code 36 indicates a system’s failure to carry out required tests, or to report the results of those tests.

Treatment techniques (for filtered systems): SDWIS Violation Code 41 shows a system’s failure to properly treat its water.

Monitoring, routine/repeat (for unfiltered systems): SDWIS Violation Code 31 indicates a system’s failure to carry out required water tests, or to report the results of those tests.

Failure to filter (for unfiltered systems): SDWIS Violation Code 42 shows a system’s failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.

Total Coliform Rule (TCR): The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

Acute MCL violation: SDWIS Violation Code 21 indicates that the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.

Non-acute MCL violation: SDWIS Violation Code 22 indicates that the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

Major routine and follow-up monitoring: SDWIS Violation Codes 23 AND 25 show that a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

Sanitary Survey: SDWIS Violation Code 28 indicates a major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

Treatment Techniques: A water disinfection process that EPA requires instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

Unfiltered Systems: Water systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

Violation: A failure to meet any state or federal drinking water regulation.